

## REMARKS

In the Final Rejection mailed November 10, 2003, the Examiner rejected claims 15-17, 19 and 20 under 35 U.S.C. § 103(a) as being unpatentable over Baker et al. in view of Asai et al. And, the Examiner rejected claims 18 and 21-25 under 35 U.S.C. § 103(a) as being unpatentable over Baker et al. in view of Asai et al. and further in view of Nakao et al. These rejections are respectfully traversed for the following reasons.

With reference to Figure 2, the inventive component mounting apparatus comprises first and second component supply tables 28A, wherein the first and second component supply tables are arranged on both sides of a board transfer path 21, respectively. Each of the first and second component supply tables 28A is supported on casters 40 so as to be moveable between support frames 29 toward and away from a respective side of a board mounting position located along the board transfer path 21. A first mounting head section 31 is provided for picking up components from one of the component supply tables 28A and then mounting these components onto a board at the board transfer position. A second mounting head 31 is also provide which picks up components from the other of the component supply tables 28A and mounts these components onto the board while at the board mounting position.

Because each of the two component supply tables 28A is supported on casters, one of the two component supply tables can be easily and quickly replaced with another component supply table when different components are to be mounted onto the board, while the other of the two component supply tables continues to mount components onto the board. Accordingly, downtime associated with providing new components to be mounted onto the board, and assembly time required to mount all necessary components onto the board, can both be reduced. Also, by having the component supply tables be arranged on both sides of the board transfer path and mounted on casters so as to be easily and quickly replaced with another component supply table, the component mounting apparatus can be downsized in the direction of the board transfer path. Such downsizing allows for a plurality of component mounting apparatus to be combined, whereby many different types of components can be quickly and successively mounted onto a board in a limited amount of space.

Each of independent claims 15, 18 and 23 is believed to adequately recite the inventive component mounting apparatus as described above.

In this regard, claim 15 recites a component mounting apparatus that comprises *inter alia*

first and second component supply tables...arranged adjacent  
to and on both sides of a board transfer path, respectively,  
**each of said first and second component supply tables  
being supported on casters so as to be movable...  
toward and away from a respective side of a board  
mounting position** (emphasis added).

Similarly, independent claims 18 and 23 each recite a component mounting apparatus that  
comprises *inter alia*

a first component supply table supported on a plurality of casters...  
a second component supply table supported on a plurality of casters...  
wherein **each of said first and second component supply tables  
can be moved in a perpendicular direction toward and away  
from the board transfer path** (emphasis added).

It is respectfully submitted that none of the references relied upon by the Examiner, either taken alone or in combination, teach or suggest a component mounting apparatus as recited in any of independent claims 15, 18 and 23. Specifically, none of the references relied upon by the Examiner teach or suggest the concept of component supply tables mounted on casters such that these component supply tables can be respectively moved toward and away from opposite sides of a board mounting position along a board transfer path. In this regard, the supply tables of Baker et al. are not mounted on casters, and though the supply carts of Asai et al. do include casters, these carts are not on opposite sides of a board mounting position or board transfer path.

Because the carts of Asai et al. are not on opposite sides of a board mounting position or board transfer path, Asai et al. fails to disclose providing easy replacement of electronic components without stopping a mounting operation. In this regard, in column 21, lines 59-67 of this reference it is stated that "rest times", needed for replacement of electronic component supplying cartridges 290, are "shortened" because one cart 294 containing plural supplying cartridges can be replaced with another cart containing plural supplying cartridges. The rest times merely being shortened, but not eliminated, indicates that a mounting operation needs to be stopped in order to replace electronic components in the system of Asai et al. This is contrary to the instant invention, where replacement of electronic components can be performed without stopping of a mounting operation due to a

component supply table being provided on each side of a board mounting position or board transfer path.

In rejecting claims 15, 18 and 23, the Examiner recognized that the component supply tables of Baker et al. are not provided with casters. Accordingly, the Examiner relied upon Asai et al.'s teaching of casters 296 provided on carts 294 for concluding that it would have been obvious for one having ordinary skill in the art to have modified Baker et al. by providing casters on the supply tables thereof. For reasons to follow, it is respectfully submitted that a combination of Baker et al. and Asai et al. would not result in the arrangement of the component supply tables as recited in each of independent claims 15, 18 and 23.

Baker et al. discloses a component pick and placement machine 11 that includes a main central section 15, a main left side section 17, a main right side section 19, a rear substrate conveyor section 21, and a central connecting section 23. Conventional component input supply reels, tubes, and tray feeder stations 27 are mounted at the front and rear of both the left and right sides sections 17 and 19, respectively. Accordingly, one of the right and left side sections 17 and 19 can be said to correspond to a first component supply table, and the other of the right and left side sections 17 and 19 can be said to correspond to a second component supply table. And, the central connecting section 23 can be said to correspond to a board transfer path, such that the main left side section 17 (first component supply table) is positioned on one side of this board transfer path, while the main right side section 19 (second component supply table) is positioned on an opposite side of this board transfer path.

In column 4, lines 32-34 of Baker et al., it is stated that the main central section 15 and the right and left side sections 17 and 19 are constructed as disclosed in the incorporated '528 patent. This '528 patent corresponds to U.S. Patent No. 5,323,528 to Baker, and is of record in the instant application.

In Baker '528, it is stated that the main central section 15, and the right and left side sections 17 and 19 of machine 11 are constructed in an extremely strong and rigid manner with frame and brace members 29 in order to assure reliable and repeatable operation (column 5, lines 31-34). Baker '528 further expresses that a welded tubular steel construction technique is utilized throughout the entire machine 11 including the board conveyor section 21 and the connecting section 23 (column

5, lines 36-41). The purpose of constructing the machine 11 from welded tubular steel is to provide a sturdy construction which assures that surface mount placement system 13 will exhibit solid operational reliability without a need for constant re-adjustment or re-calibration (column 5, lines 41-44. Also, please note that Figure 4 of Baker '528 shows frame and brace members 29, which form the right and left side sections 17 and 19, to be unitary and interconnected with each other, and note that this Figure 4 is basically the same as Figure 4 of Baker et al. '001.

From the above, it should be clear that the central main section 15, main left side section 17, main right side section 19, board conveyor section 21 and connecting section 23 of Baker et al. '001 are constructed from welded tubular steel so as to define a single unitary, stationary and stable structure. Accordingly, the main right side section 19 (second component supply table) and the main left side section 17 (first component supply table) cannot move relative to one another and cannot move relative to the connecting section 23 (board transfer path).

Thus, if Baker et al. '001 was modified as proposed by the Examiner so as to include casters on the supply tables thereof (i.e. left side section 17 and right side section 19), the left side section 17 (first component supply table) and right side section 19 (second component supply table), though now being movable, would not be moveable relative to one another nor moveable relative to the central connecting section 23 (board transfer path).

That is, if the right side section 19 and left side section 17 of Baker et al. were provided with casters, these sections would not be able to move relative to the central connecting section 23, due to the rigid welded interconnected structure of these sections. Thus, Baker et al. '001 when modified so as to include casters, as proposed by the Examiner, would **not** include first and second component supply tables that are "moveable toward and away from a respective side of a board mounting position" as recited in claim 15, and that could be "moved in a perpendicular direction toward and away from the board transfer path" as recited in each of independent claims 18 and 23.

Additionally, in view Baker's desire to provide for a sturdy construction that will not require re-adjustment and re-calibration, it is respectfully submitted that one having ordinary skill in the art would not have found it obvious to modify machine 11 by making any of sections 15, 17, 19, 21 and 23 separable or movable relative to another, because to do so would require that the machine be

constantly re-adjusted and re-calibrated so as to ensure that all the sections of the machine are properly positioned relative to one another.

Nakao et al. does not resolve this deficiency of Baker et al. '001, and accordingly, any combination of the references relied upon by the Examiner would not result in the invention as recited in any of independent claims 15, 18 and 23. Thus, claims 15-25 are allowable.

In view of the above remarks, it is respectfully submitted that the present application is in condition for allowance and an early Notice of Allowance is earnestly solicited.

If after reviewing this Request, the Examiner believes that any issues remain which must be resolved before the application can be passed to issue, the Examiner is invited to contact the Applicants' undersigned representative by telephone to resolve such issues.

Respectfully submitted,

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